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| EXAMINER |
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WOLLSCHLAGER, JEFFREY MICHAEL

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| ART UNIT | PAPER NUMBER |
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1791

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|-------------------|---------------|
| NOTIFICATION DATE | DELIVERY MODE |
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06/28/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com  
offserv@bipc.com

|                              |   |                                     |  |
|------------------------------|---|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/562,047    | <b>Applicant(s)</b><br>ESTUR ET AL. |  |
|                              | <b>Examiner</b><br>JEFFREY WOLLSCHLAGER | <b>Art Unit</b><br>1791             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15-22, 24, 25 and 29-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-22, 24, 25 and 29-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

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## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 2, 2010 has been entered.

### ***Response to Amendment***

Applicant's amendment to the claims filed June 2, 2010 has been entered. Claim 15 is currently amended. Claims 15-22, 24, 25 and 29-33 are pending and under examination.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15, 17, 20-22, 24, 25, and 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Minami et al. (US 3,709,806).

Regarding claims 15, 17, 20-22, 24, 25 and 29-31, Minami et al. teach the claimed process of producing expanded, spherical pearls/particles (col. 3, lines 25-42) comprising extruding a polyolefin based resin, including blends with polyamide (col. 3 lines 58-67), and a decomposing chemical blowing agent (Abstract) into hot water and chopping the particle in the hot water (col. 3, lines 25-42). The hot water cools the material and the particles have a

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diameter of about 0.1 to 6 mm and a skin layer (col. 5, line 42-col. 6, line 45). The die plate was washed with water and immediately while still relatively hot the particles were cut with a rotary blade (col. 8, lines 34-56). In the preferred embodiment of Minami et al. "hardly" any foaming takes place at this stage. However, this still results in some foaming (i.e. hardly is not the same as none). Further, Minami et al. disclose that eliminating the use of xylene yielded an article that was foamed more (col. 8, lines 51-56). In that scenario, even though Minami et al. does not desire the extensive foaming, additional foaming is disclosed. It is noted that claims 32 and 33 are not rejected over Minami et al. since those claims require a more substantial expansion than that taught, disclosed, or suggested by Minami et al.

Claims 15-18, 21, 24, 25 and 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujie et al. (US 4,644,013).

Regarding claims 15-18, 21, 24, 25 and 30-33, Fujie et al. teach the claimed process of producing a spherical foam particle (col. 6, lines 33-37) comprising extruding an ethylenic resin and a blowing agent (Abstract; col. 3, lines 1-10; col. 6, lines 5-16) through a nozzle at the end of the extruder to expand the material and cooling the expanded material by applying water to the expanded material and chopping the expanded particles (col. 7, lines 15-43; col. 14, lines 55-col. 15, line 2). The density of the foam particles is around 0.03 g/cc (Table 2) and the size of the particles is between 2 and 10 mm (col. 22, lines 32 and 41-42). As such, the examiner submits that Fujie et al. anticipate the claims.

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 15, 17, 20-22, 24, 25, and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (US 3,709,806) in view of either Cates et al. (US 5,284,433) or Bruckmann et al. (US 5,059,103). *Note: This is an alternative rejection of the claims based upon Minami et al.*

Regarding claims 15, 17, 20-22, 24, 25 and 29-31, Minami et al. teach the claimed process of producing expanded, spherical pearls/particles (col. 3, lines 25-42) comprising extruding a polyolefin based resin and a decomposing chemical blowing agent (Abstract) into hot water and chopping the particle in the hot water (col. 3, lines 25-42). The hot water cools the material and the particles have a diameter of about 0.1 to 6 mm and a skin layer (col. 5, line 42-col. 6, line 45). The die plate was washed with water and immediately while still relatively hot the particles were cut with a rotary blade (col. 8, lines 34-56). In the preferred embodiment of Minami et al. "hardly" any foaming takes place at this stage. However, this still results in

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some foaming (i.e. hardly is not the same as none). Further, Minami et al. disclose that eliminating the use of xylene yielded an article that was foamed more (col. 8, lines 51-56). In that scenario, even though Minami et al. does not want the foaming, additional foaming is disclosed. It is noted that claims 32 and 33 are not rejected over Minami et al. since those claims require a more substantial expansion than that taught, disclosed, or. Accordingly, as set forth above, the examiner submits that the teaching of Minami et al. that the material is "immediately" cut by a "rotary blade" (col. 8, lines 42-51) teach the claimed process.

However, in the alternative, if such teaching is not understood to rise to the level of clearly articulating the claimed process and configuration, each of Cates et al. (Abstract; Figure 1; col. 1, lines 16-31; col. 3, lines 60-63; col. 5, lines 25-30) and Bruckmann et al. (Abstract; Figure 1) demonstrate how such an immediate cutting arrangement would be understood to be employed in the analogous art.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have combined the teaching Minami et al. and either of Cates et al. or Bruckmann et al. and to have chopped the material at the die outlet for the purpose, as suggested by Minami et al. themselves of "immediately" cutting the material with a rotary blade in an art recognized suitable manner.

Claims 15-18, 21, 24, 25 and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujie et al. (US 4,644,013) in view of either Cates et al. (US 5,284,433) or Bruckmann et al. (US 5,059,103). *Note: This is an alternative rejection of the claims based upon Fujie et al.*

Regarding claims 15-18, 21, 24, 25 and 30-33, Fujie et al. teach the claimed process of producing a spherical foam particle (col. 6, lines 33-37) comprising extruding an ethylenic resin

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and a blowing agent (Abstract; col. 3, lines 1-10; col. 6, lines 5-16) through a nozzle at the end of the extruder to expand the material and cooling the expanded material by applying water to the expanded material and chopping the expanded particles (col. 7, lines 15-43; col. 14, lines 55-col. 15, line 2). The density of the foam particles is around 0.03 g/cc (Table 2) and the size of the particles is between 2 and 10 mm (col. 22, lines 32 and 41-42). As such, the examiner submits that Fujie et al. anticipate the claims as set forth above.

However, in the alternative, if such teaching is not understood to rise to the level of clearly articulating the claimed process and configuration, each of Cates et al. (Abstract; Figure 1; col. 1, lines 16-31; col. 3, lines 60-63; col. 5, lines 25-30) and Bruckmann et al. (Abstract; Figure 1) demonstrate how such a cutting arrangement would be suitably configured in the analogous art.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have combined the teaching Fujie et al. and either of Cates et al. or Bruckmann et al. and to have chopped the material at the die outlet for the purpose, as suggested by Fujie et al. of forming a spherical foam particle having the desired density and in-mold expanding ability (col. 7, lines 38-48).

Claims 16, 22 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujie et al. (US 4,644,013) in view of either Cates et al. (US 5,284,433) or Bruckmann et al. (US 5,059,103), as applied to claims 15-18, 21, 24, 25 and 30-33 above and further in view of Lesca et al. (US 5,324,753). *Note: this is an alternative rejection of claim 16.*

As to claims 16, 22 and 29, the combination teaches the method set forth above. Further, the examiner submits that Fujie et al. disclose a blowing agent meeting the limitation of claim 16 under a reasonable interpretation. However, Fujie et al. do not teach the gaseous

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blowing agent is, for example, nitrogen or carbon dioxide. Further, Fujie et al. do not recite fillers as claimed. However, Lesca et al. teach an analogous method wherein nitrogen or carbon dioxide is employed and wherein fillers as claimed are employed (col. 4, lines 35-col. 5, lines 16).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Fujie et al. and to have employed fillers and blowing agents, such as those suggested by Lesca, for the purpose of achieving desired foam properties (e.g. color, strength, appearance).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujie et al. (US 4,644,013) in view of either Cates et al. (US 5,284,433) or Bruckmann et al. (US 5,059,103), as applied to claims 15-18, 21, 24, 25 and 30-33 above and further in view of Amano et al. (US 5,234,640).

As to claim 19, the combination teaches the method set forth above. Fujie et al. do not teach the claimed expanding agent. However, Amano et al. teach a method of producing foamed thermoplastic materials wherein they disclose that aromatic polycarbonate is known to be a blowing agent and suggest that it is an equivalent alternative of azodicarbonamide, nitrogen, carbon dioxide, and various other blowing agents (col. 4, lines 11-30). The examiner notes that in the original disclosure, published as US 2007/0036967, paragraph [0030], polycarbonate is disclosed as a blowing agent that meets the instant limitation.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Fujie et al. and to have employed polycarbonate as a blowing agent, as suggested by Amano et al., since Amano et al.



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suggest polycarbonate is an equivalent alternative blowing agent known in the art to be suitable for forming a foamed product (MPEP 2144.06-2144.07).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujie et al. (US 4,644,013) in view of either Cates et al. (US 5,284,433) or Bruckmann et al. (US 5,059,103), as applied to claims 15-18, 21, 24, 25 and 30-33 above and further in view of Pontiff (EP 0 450 205).

As to claim 20, the combination teaches the method set forth above. Fujie et al. do not teach employment of a polyamide. However, Pontiff teaches the thermoplastic material may be a polyamide (page 4, lines 26-30).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Fujie et al. and to have employed a polyamide as the thermoplastic, as suggested by Pontiff, since Pontiff suggests such a thermoplastic is known in the art to be suitable for forming a foamed bead/pearl product (MPEP 2144.06-2144.07).

Claims 15, 16, 18, 21, 22, 24, 25 and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. (US 5,744,505) in view of any one of Hunke (US 4,838,775) or Rockstedt (US 5,814,350) or Mattera (US 5,215,763).

Regarding claims 15, 16, 18, 21, 22, 24, 25 and 29-33, Fischer et al. teach the basic claimed process of producing prefoamed beads comprising adding a blowing agent to polyolefin granules, extruding the material with accompanying expansion and immediately granulating the bead to form a spherical particle having from 2 to 20 mm and a density from 0.01 to 0.15 g/cc (Abstract; col. 2, lines 16-col. 3, lines 23; Example). Fischer et al. do not teaching cooling with

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liquid as claimed. However, each of Hunke (Abstract; Figure 1), Rockstedt (Abstract; Figure 2; col. 2, lines 13-63) and Mattera (Abstract; col. 2, lines 28-46) show cutting apparatus wherein cooling water is employed to facilitate the die face cutting process.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Fischer et al. and to have employed the cutting apparatus disclosed by any one of Hunke, Rockstedt or Mattera for the purpose of effectively cutting the pellets of Fischer et al. with an art recognized suitable cutter without causing the material to plug the cutting blades.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. (US 5,744,505) in view of any one of Hunke (US 4,838,775) or Rockstedt (US 5,814,350) or Mattera (US 5,215,763), as applied to claims 15, 16, 18, 21, 22, 24, 25 and 29-33 above, and further in view of Amano et al. (US 5,234,640).

As to claim 19, the combination teaches the method set forth above. Fischer et al. do not teach the claimed expanding agent. However, Amano et al. teach a method of producing foamed thermoplastic materials wherein they disclose that aromatic polycarbonate is known to be a blowing agent and suggest that it is an equivalent alternative of azodicarbonamide, nitrogen, carbon dioxide, and various other blowing agents (col. 4, lines 11-30). The examiner notes that in the original disclosure, published as US 2007/0036967, paragraph [0030], polycarbonate is disclosed as a blowing agent that meets the instant limitation.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Fischer et al. and to have employed polycarbonate as a blowing agent, as suggested by Amano et al., since Amano et al.

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suggest polycarbonate is an equivalent alternative blowing agent known in the art to be suitable for forming a foamed product (MPEP 2144.06-2144.07).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. (US 5,744,505) in view of any one of Hunke (US 4,838,775) or Rockstedt (US 5,814,350) or Mattera (US 5,215,763), as applied to claims 15, 16, 18, 21, 22, 24, 25 and 29-33 above, and further in view of Pontiff (EP 0 450 205).

As to claim 20, the combination teaches the method set forth above. Fujie et al. do not teach employment of a polyamide. However, Pontiff teaches the thermoplastic material may be a polyamide (page 4, lines 26-30).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Fischer et al. and to have employed a polyamide as the thermoplastic, as suggested by Pontiff, since Pontiff suggests such a thermoplastic is known in the art to be suitable for forming a foamed bead/pearl product (MPEP 2144.06-2144.07).

### ***Response to Arguments***

Applicant's arguments filed June 2, 2010 have been fully considered, but they are moot in view of the new grounds of rejection necessitated by the amendment to the claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY WOLLSCHLAGER whose telephone number is (571)272-8937. The examiner can normally be reached on Monday - Thursday 6:45 - 4:15, alternating Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff Wollschlager/  
Primary Examiner  
Art Unit 1791

June 24, 2010